



Highly precise. Reproducible.
Flexible in applications.

- Automotive industry
- Printing industry
- Electronics industry
- Wood industry
- Plastics industry
- Mold making
- Optics industry
- Textile industry
- Surface technology
- Engine repair
- Toolmaking





US015-1K

Single-Chamber-System made by HGH

- Frequency 25 or 40 kHz
- With a product basket
- Welded tray with lid
- Can be optionally extended with an oil separator

Model	US015-1K	US025-1K	US040-1K	
Basket size [mm]	295 x 240 x 170	450 x 250 x 110	375 x 375 x 190	
Chamber size [mm]	325 x 300 x 200	500 x 300 x 200	400 x 400 x 300	
US power [W]	300 am Boden	300 am Boden	450 am Boden	
Heat output [kW]	0,75 / Chamber	1 / Chamber	2 / Chamber	
Model	US060-1K	US090-1K	US120-1K	US160-1K
Basket size [mm]	475 x 375 x 190	570 x 375 x 290	570 x 470 x 290	570 x 470 x 290
Chamber size [mm]	500 x 400 x 300	600 x 400 x 400	600 x 500 x 400	600 x 500 x 400
US power [W]	600 am Boden	900 am Boden	1200 am Boden	1200 am Boden
Heat output [kW]	2 / Chamber	4 / Chamber	4 / Chamber	4 / Chamber



US060-2K with base frame

Dual-Chamber-System made by HGH

- Frequency 25 or 40 kHz
- With a product basket
- Welded tray with lid
- Can be optionally extended with an oil separator

Model	US015-2K	US025-2K	US040-2K
Basket size [mm]	295 x 240 x 170	450 x 250 x 110	375 x 375 x 190
Chamber size [mm]	325 x 300 x 200	500 x 300 x 200	400 x 400 x 300
US power [W]	300 am Boden	300 am Boden	450 am Boden
Heat output [kW]	0,75 / Chamber	1 / Chamber	2 / Chamber
Model	US060-2K	US090-2K	
Basket size [mm]	475 x 375 x 190	570 x 375 x 290	
Chamber size [mm]	500 x 400 x 300	600 x 400 x 400	
US power [W]	600 am Boden	900 am Boden	
Heat output [kW]	2 / Chamber	4 / Chamber	

Single-Chamber-System

- Frequency 40 kHz
- With a product basket
- Welded tray with lid



US003-1K-ED

Model	US003-1K-ED	US006-1K-ED	US010-1K-ED
Basket size [mm]	190 x 115 x 85	270 x 146 x 110	280 x 230 x 120
Chamber size [mm]	240 x 140 x 100	300 x 155 x 150	300 x 240 x 150
US power [W]	120	180	240
Heat output [kW]	0,1 / Chamber	0,3 / Chamber	0,3 / Chamber
Model	US015-1K-ED	US030-1K-ED	
Basket size [mm]	313 x 280 x 115	470 x 270 x 120	
Chamber size [mm]	330 x 300 x 115	495 x 295 x 200	
US power [W]	360	600	
Heat output [kW]	0,4 / Chamber	0,8 / Chamber	



Additional accessories and special equipment for models „made by HGH“

- Illustration similar
- Extension of the systems with additional accessories
- Possibility of integration into the production



US060-2K Öl with base frame and manual goods lift



Small parts basket



Draining station

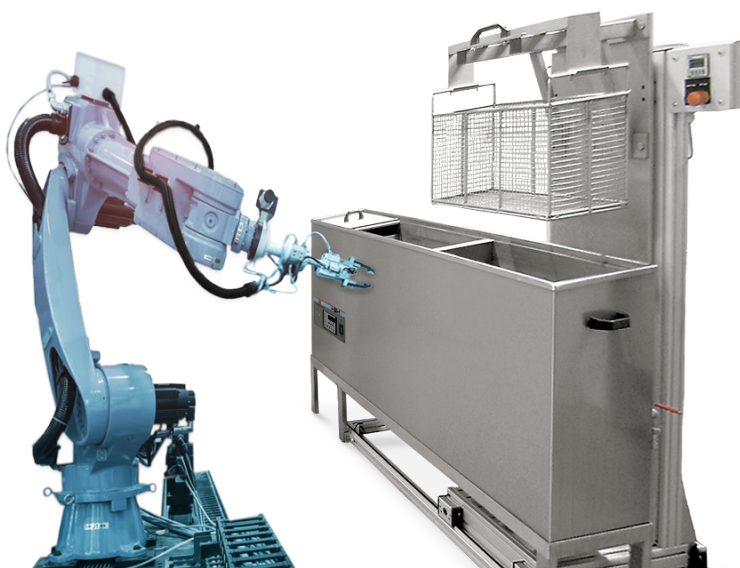


Base frame

Optional accessories · available as an option	Model Single-Chamber-System						Model Dual-Chamber-System				
	US015-1K	US025-1K	US040-1K	US060-1K	US090-1K	US120-1K	US015-2K	US025-2K	US040-2K	US060-2K	US090-2K
Oil separator		•	•	•	•	•		•	•	•	•
Sink/ preservation							•	•	•	•	•
Draining station			•	•	•	•		•	•	•	•
Bypass filtration			•	•	•	•			•	•	•
2 and 3-sided ultrasonic			•	•	•	•			•	•	•
Dryer			•	•	•	•			•	•	•
Tray bath			•	•	•	•			•	•	•
VE level/ chamber	•	•	•	•	•	•	•	•	•	•	•
Manual fabric lift			•	•	•	•			•	•	•
Base frame		•	•	•	•	•	•	•	•	•	•

Integration into production

- Seamless integration into existing processes
- Maximum flexibility due to
 - a wide range of accessories
 - a choice of base frames
- Ideal adaptation to your individual requirements



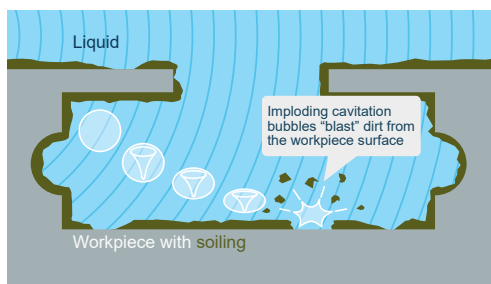
A brief introduction to the basics

Ultrasonic cleaning

"Ultrasound" refers to mechanical vibrations with a frequency above the upper hearing limit of an adult, i.e. above approx. 18 kHz.

Liquids are held together by internal forces of attraction (cohesion). Their size determines the tensile strength of the liquid. Ultrasound propagates in liquid media in the form of a longitudinal wave. As a result of the alternating sound pressure, compaction and dilution occur. The tensile forces in the suction phase of the oscillation (dilution) can tear the liquid apart, resulting in so-called cavitation.

High localized pressures and strong turbulence and currents in the liquid occur around the cavitation bubbles due to the bang-like implosion. These phenomena are the actual criteria that lead to the detachment of dirt particles on a surface.



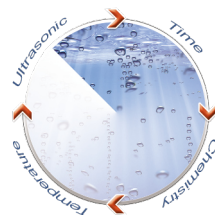
In addition to dust and dirt particles, other "imperfections" such as rough and dirty surfaces (interfaces) of immersed parts in the liquid also act as cavitation nuclei. Cavitation therefore occurs exactly where it is desired. Dirt particles are blasted off these contact surfaces and suspended in the liquid.

Cavitation effectiveness is influenced by many parameters. Among other things, it depends on the external pressure, the temperature, the sound frequency, the viscosity of the liquid and the surface to be cleaned.

The cleaning effect is comparable with countless microbrushes. The smallest and hard-to-reach areas in particular, such as drill holes, corners or undercuts, are reached advantageously.

Perfect cleaning results

The interaction of the 4 factors



Four factors

are decisive in ultrasonic cleaning for perfect results.

1. The ultrasonic

generates cavitation and creates intensive forces that gently detach the dirt particles from the items to be cleaned.

2. The cleaning time

is a few seconds to a few minutes, depending on the degree of soiling. A test cleaning is recommended.

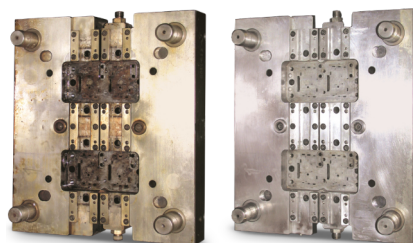
3. The chemical cleaning product

dissolves the dirt, which is then removed using ultrasound..

4. Higher bath temperatures

ensure that many cleaners are fully effective.

The before and after comparison is convincing



Ultrasonic cleaning of molds



Ultrasonic cleaning of polished mold inserts

Cleaning products by HGH

We have a large selection of cleaning and care products that are precisely tailored to your applications. You can find a selection here.

Cleaner	pH value	Approach	Cleaning items	Soiling
HGH Clean 12,4	12,4	5-20 %	Iron, steel, stainless steel, limited suitability for non-ferrous metals	Plastic evaporation, oils, greases, cooling lubricants, Grinding, polishing and lapping residues
HGH Softclean 22	8,9	US: 3-5 % Korr.: 0,5-2 %	All materials	Oils, cooling lubricants, grinding and polishing paste
Hoeschalin 821	13,0	100 %	Iron, steel	Plastic evaporation, burnt rubber, oils, greases, paints, aluminum, zinc
HGH Clean 21400	13,0	3-5 %	Iron, steel, stainless steel	POM, plastic evaporation, oils, greases, cooling lubricants, Grinding, polishing and lapping residues, drawing agents, encrusted oil residues
HGH Clean 21300	13,0	4-15 %	Steel, stainless steel, copper	Plastic evaporation, oils, greases, aluminum, zinc
HGH Clean 20200	2,5	2-3 %	Iron, non-ferrous metals	Oils, polishing paste, oxide layers



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